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MEETING THE GOALS OF THE ICPD: CONSEQUENCES OF RESOURCE SHORTFALLS UP TO THE YEAR 2000

Report of the Executive Director

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METHODOLOGY AND DATA

1. At the 1997 annual session of the Executive Board, the general discussion on the first version of this report (DP/FPA/1997/CRP.1) indicated a desire on the part of the Board for a revised report containing a more thorough description of the methodology used to calculate the consequences of resource shortfalls, including references to the data sources used. The purpose of this Annex is to meet both of those requests. A list of references is provided in this Annex and cross-referenced, as appropriate, in the text, notes and tables.

2. The computational method used here is based on a 1996 study by the Alan Guttmacher Institute (AGI) which looked at potential negative consequences if overseas family planning programmes experienced declines in funding due to a budget cut of 35 per cent proposed for United States international assistance (AGI, 1996). The AGI study benefited from the knowledge and expertise of several other organizations including The Futures Group, Population Action International, the Population Reference Bureau and The Population Council. While the analysis of this report uses the basic methodology and much of the data of the AGI study, it also extends it in certain ways, such as using disaggregated, regional calculations where data availability made this possible and extending the topics covered (maternal morbidity and child mortality).

3. As explained in section III of the report, the 1994 UNFPA study that estimated the cost requirements for the family planning component of the ICPD Programme of Action relied on empirical estimates of the extent of "unmet need" for family-planning services available from many recent demographic and health surveys (and other surveys as well).[1] These estimates were combined with estimates of per user average costs to obtain first regional, then global, resource requirements (UNFPA, 1994b).

4. In this report, the reverse procedure is used. That is, resource shortfalls are divided by per user average costs to project numbers of individuals/couples with "unmet needs", i.e., additional couples/individuals who would be constrained from implementing their reproductive desires. Depending on the scenario, the global shortfall in resources is translated into an estimate of the reduction in the number of potential users of family-planning services -- those who would no longer have access to such services -- for each year in the period 1995-2000. These calculations are done by region and then aggregated to the global level. The basic data used in the analysis and the sources of data are given in Annex table 2. The reader is invited to refer to that table while following the details of the methodology as they are explained below.

5. Once the reduction in the number of potential users has been calculated, the next step is to estimate the proportion of those potential users who will decide to use a traditional contraceptive method (i.e., periodic abstinence or withdrawal). About 26 per cent of "acceptors"

(individuals/couples accepting a particular contraceptive method either from a family-planning service agency or on their own) in developing countries in any given year normally "accept" traditional methods (see row 6 of Annex table 2). The "reduction in potential users" is therefore itself lowered by this proportion.

6. After the number of potential users has been reduced by subtracting these "willing" users of traditional methods, the remainder represents individuals/couples who would have used a modern method of contraceptive had appropriate services been available. The method assumes that a large proportion of these people would also opt to use (or "accept") a less effective but low-cost traditional method as a substitute for a modern method that is not available due to under-funding of services. This proportion has been conservatively estimated at 40 per cent (see row 7 of Annex table 2). This is the percentage used in the study of the consequences of reduced support from United States for family planning programmes (AGI, 1996). For consistency, the same percentage is used in this report even though its use tends to under-estimate negative consequences because in the AGI study current contraceptive users were affected by funding cuts whereas in this analysis potential future users are affected. The former group would tend to be more motivated to replace the current use of a modern method by a traditional method of contraceptive than would potential users.

7. The third step in the method is to estimate the number of additional unwanted or unintended pregnancies that would occur in each year during 1995-2000. The number of unwanted pregnancies is the sum of two estimates: pregnancies to those individuals/couples adopting traditional methods of contraception (i.e., those described in paragraph 5 above) and pregnancies to the group of potential users who will not be using any contraceptive method at all. The multipliers -- pregnancy rates *per annum* -- are found in rows 8 and 9 of Annex table 2. The pregnancy rate of traditional contraceptive users is estimated at 30 per cent and of non-contraceptors at 75 per cent, both rates being constant throughout the period.

8. The fourth step is to estimate the number of unintended/unwanted pregnancies that will be terminated by induced abortions. The ratio used, 40 per cent of pregnancies, is based mainly on WHO data (see Annex table 2, row 10, for references). Admittedly, data on abortion are incomplete and suffer from reporting deficiencies (usually under-reporting). Although some data for several regions are available, it was felt that coverage within regions was too patchy to attempt regional estimates of additional abortions due to funding shortfalls. Thus, a global ratio (40 per cent) was used. It may be noted that data from Latin America, arguably the developing region with the best data on the incidence of abortion, generally imply ratios above 40 per cent (AGI, 1994). At the same time, it is understood that because the focus of this analysis is potential future users of contraceptives, motivation to abort unplanned pregnancies may be somewhat lower than among current users, the subject of the AGI study. In the absence of more refined

data, the AGI estimate of 40 per cent was retained in this analysis even though it may tend to over-estimate additional induced abortions.

9. The fifth computational step is to estimate the number of unintended births that result from the non-terminated pregnancies. The global proportion used is 47 per cent of the unintended pregnancies (see Annex table 2, row 11). The remaining 13 per cent of pregnancies are assumed to end as spontaneous abortions and stillbirths. A global proportion was also used here due to the paucity of regionally disaggregated data on spontaneous abortion.

10. Next, maternal deaths are computed from the estimated number of unintended live births (Annex table 2, row 12). In this case, regional data are available from revised estimates prepared by WHO/UNICEF, ranging from 61 deaths per 100,000 births in countries with economies in transition to 981 deaths in sub-Saharan Africa. Related to maternal mortality is maternal morbidity. Maternal morbidity has not yet been well measured, but is known to be a major health problem. The ratio of cases of morbidity to maternal deaths used in this analysis (Annex table 2, row 13) is 13 morbidity cases per maternal death. This is probably a gross under-estimate of the true proportions of maternal morbidity, but it was felt that any report on negative consequences would be incomplete without including an estimate of morbidity consequences even if it were an under-estimate. One recent study reported ratios in Bangladesh, Egypt and India for life-threatening (malaria, hemorrhage or convulsions during pregnancy) morbidities higher than 13 cases per death, respectively (Fortney and Smith, 1997). Ratios for life-threatening or serious (edema, hypertension, long fever, severe vomiting, etc.) morbidities were far higher (*ibid.*). In view of ongoing methodological developments, it was felt that a conservative value for this parameter should be used.

11. The next computation involves additional infant deaths (i.e., to children less than one year old) that could be attributed to resource shortfalls. Infant deaths are calculated from unintended births by applying infant mortality rates. Regional rates were used (Annex table 2, row 14), ranging from 19 infant deaths per 1,000 live births in the countries with economies in transition to 91 deaths in sub-Saharan Africa.

12. Finally, additional child deaths (i.e., to children 1-4 years of age) are computed from unintended births using regional under-five mortality rates (Annex table 2, row 15). Since estimates are available only for the period 1990-1995, all rates were reduced by 10 per cent to reflect possible improvements over the subsequent five years.[2] The number of deaths of children aged 1-4 is the difference between under-age-five deaths and infant deaths. Note that although the projection period for determining consequences is 1995-2000, child deaths may take place beyond the year 2000. For example, a child born in 2000 who dies at age four, will die in 2004.

13. The other three components of the ICPD's costed population and reproductive health package were originally derived using per capita cost estimates. It is not possible at this time, because of lack of data as well as a dearth of established indicators, to present consequences of lower levels of resources in quantitative terms for these components. Qualitative assessments have therefore been given for impacts on basic reproductive health services (paras. 33 to 39 of the main text) and prevention of HIV/AIDS (paras. 40 to 43).

14. A number of assumptions are implicit in the analysis, some of which may tend to cause consequences to be under-estimated while others may produce a tendency towards over-estimation. One assumption is that marginal costs are equated with average costs, the only cost information available. However, this is a conservative assumption since, generally speaking, marginal costs should be lower than average costs because of increasing economies of scale. The report also assumes that all countries would share equally in resource shortfalls. But some countries (those politically very committed to family-planning programmes) are not likely to reduce resources at all. Since committed countries would generally also be countries with higher contraceptive prevalence rates and lower costs-per-user, assuming homogeneity probably also under-estimates the number of additional non-users.

15. When official programmes suffer reductions in resources, some sufficiently motivated individuals/couples may pay out of their own pockets for privately supplied services. Similarly, NGOs that get reduced government or donor support may also increase fees for services. Substitution of publicly supplied services by privately supplied services, however, does not mean reduced resources, merely an altered distribution of domestic resources between public and private financing. It is not certain what effect such substitution would have on the estimation of consequences. The study likewise assumes no gains in efficiency that might result from financial adversity. Effectively, such outcomes would tend to lower the costs-per-user that have been assumed to be constant. To the extent that efficiencies do occur, consequences would be somewhat over-estimated. It should be noted, nonetheless, that attempts to introduce efficiency measures (such as cost recovery) have usually led to lowering service access to the poorest clients. Furthermore, recent operations research seems to show that only modest success has been achieved so far in lowering costs (Levin *et al.*, 1997).

16. Each consequence explored in the report is also assumed to take place in isolation without affecting other parts of the system. Such interactions do occur, but the general rates that are used in a sense have the interactions already built-in. Thus, the interactive effect of one consequence on another should be quite small.

17. A final assumption relates to traditional contraception. A certain proportion of "potential non-users" (those not using contraception because information and/or services never reached

them) will use traditional methods. The AGI study assumed a high proportion (40 per cent) because it was looking at programme cut-backs which would largely affect highly motivated users. In the case presented here, however, the general motivation may be lower, and a lower proportion therefore may be more realistic. This conservative assumption (made in the absence of data) should, if anything, lead to under-estimation of consequences.

18. The important point to keep in mind when considering the data used in this report and the assumptions made in applying the methodology is that the quantitative estimates reported here should be thought of as representing ranges rather than exact quantities. Viewing the estimates in this way, however, does not detract from the seriousness of the analytical findings on the negative repercussions of failure to fully implement the Programme of Action.

NOTES

1. Average costs per user of family planning services are key data for the methodology used here. Several sources were used for estimating these costs: UNFPA, 1994b; Bulatao, 1985; Gillespie *et al.*, 1989; Herrin *et al.*, 1996; Kocher and Buckner, 1991; Knowles and Wagman, 1991; Lande and Geller, 1991; Nortman, 1982; Speidel, 1983; Thompson *et al.*, 1996a; Thompson *et al.*, 1996b; World Bank, 1993.

2. A 10 per cent improvement mirrors the average improvements in infant mortality rates that have been recorded over the last decade.

Table 1. Consequences of Shortfalls in Resources for the ICPD Programme of Action

	Year/ Period	Constant Trend Growth Scenario	Intermediate Growth Scenario	Low Growth Scenario
Reductions in potential users of FP services	2000	97 million (individuals/couples without access to FP services)	130 million (individuals/couples without access to FP services)	170 million (individuals/couples without access to FP services)
Increases in individuals/ couples using traditional methods	2000	30 million (individuals/couples)	40 million (individuals/couples)	54 million (individuals/couples)
Increases in non-contraceptors	2000	44 million (individuals/couples)	59 million (individuals/couples)	80 million (individuals/couples)
Increases in unintended pregnancies	2000	42 million (pregnancies)	56 million (pregnancies)	76 million (pregnancies)
	1995-2000	*130 million*	*170 million*	*230 million*
Increases in induced abortions of unintended pregnancies	2000	17 million (abortions)	23 million (abortions)	31 million (abortions)
	1995-2000	*51 million*	*68 million*	*92 million*
Increases in unintended births	2000	20 million (births)	26 million (births)	36 million (births)
	1995-2000	*59 million*	*79 million*	*110 million*
Increased maternal mortality	2000	99,000 (deaths)	130,000 (deaths)	180,000 (deaths)
	1995-2000	*300,000*	*400,000*	*540,000*
Increased maternal morbidity	2000	1.3 million (cases)	1.7 million (cases)	2.3 million (cases)
	1995-2000	*3.8 million*	*5.1 million*	*7.0 million*
Increased infant mortality	2000	1.2 million (deaths)	1.6 million (deaths)	2.2 million (deaths)
	1995-2000	*3.6 million*	*4.8 million*	*6.5 million*
Increased child mortality	2000	440,000 (deaths)	590,000 (deaths)	800,000 (deaths)
	1995-2000	*1.3 million*	*1.8 million*	*2.4 million*

Note: ***Cumulative totals for 1995-2000 are shown in italics.***

Table 2. Summary of Rates Used to Estimate Consequences of Resource Shortfalls

Rate or Measure	Year/ Period	Value Used in Report	Sources*
1. Women aged 15-49, developing countries	1995 2000	1,132 m. 1,254 m.	UN/DESIPA, 1996c, pp. 117f.
2. Women aged 15-49, transition countries	1995 2000	97 m. 100 m.	UN/DESIPA, 1996c, pp. 117f.
3. All contraceptive users, developing countries	1995 2000	470 m. 551 m.	UN/DESIPA, 1996c, p. 33
4. All contraceptive users, transition countries	1995 2000	60 m. 62 m.	UNFPA, 1994b, p. 10
5. Estimated regional average costs per user	1995 2000	$8.76 to $33.33 $8.37 to $28.33	UNFPA, 1994b, p. 10
6. Estimated proportions of acceptors by contraceptive method	1995-2000	Sterilization 7 % IUD 17 % Traditional 26 %	UNFPA, 1994a, p. 22; VCIOM, 1997, table 15
7. Proportions adopting traditional contraceptive method	1995-2000	40 %	AGI, 1996, p. 4. See also: AGI, 1995
8. Pregnancy rates (traditional users)	1995-2000	30 %	AGI, 1996, p. 4. See also: Hatcher *et al.*, 1994; Moreno and Goldman, 1991; Jones, 1991; Jones and Forrest, 1992
9. Pregnancy rates (non-users)	1995-2000	75 %	AGI, 1996, p.4. See also: Hatcher *et al.*, 1994
10. Induced abortions per unintended pregnancy	1995-2000	40 %	AGI, 1996, p. 4. See also: WHO, 1994; Henshaw, 1990; AGI, 1995; AGI, 1994; DHS survey results
11. Proportion of pregnancies resulting in live births	1995-2000	47 %	AGI, 1996, p. 4. See also, AGI, 1995; AGI, 1994
12. Regional maternal mortality ratios (deaths per 100,000 births)	1995-2000	61 to 981 (average = 480)	WHO/UNICEF, 1996, pp. 9f.
13. Maternal morbidity rates (cases per maternal death)	1995-2000	13	UNFPA, 1997, p. 19. See also, Fortney and Smith, 1997; Philippines, 1994
14. Regional infant mortality rates (deaths per 1,000 births)	1995-2000	19 to 91 (average = 62)	UN/DESIPA, 1996a
15. Regional child mortality rates (deaths per 1,000 births)	1995-2000	21 to 141 (average = 81)	UN/DESIPA, 1996b, p. 266

* See the list of reference accompanying the Annex.

Table 3. Donor Assistance for Population in 1995 and Possible Patterns for 2000

	Population assistance in 1995 (1) ($ millions)	ICPD target reached using GDP (1995) distribution (2) ($ millions)	Annual rate of growth to meet ICPD resource target (3) Per cent
Australia	27	57	16
Austria	3	38	68
Belgium	6	44	51
Canada	37	93	20
Denmark	50	28	–
Finland	22	21	–
France [a]	13	252	80
Germany	145	395	22
Ireland	3	10	28
Italy	4	178	109
Japan	94	837	55
Luxembourg	1	3	26
Netherlands	87	65	–
New Zealand	1	9	51
Norway	47	24	–
Spain [a]	1	93	176
Sweden [a]	45	37	–
Switzerland	17	50	24
United Kingdom	98	180	13
United States	667	1,157	12
TOTAL [b]	1,368	3,570 [c]	21

Source: UNFPA *Global Population Assistance Report, 1995*, forthcoming.

[a] For France and Spain, 1993 data were used. For Sweden, 1994 data were used.
[b] Due to rounding, columns may not sum exactly to totals.
[c] Reaching the necessary $5.67 billion would also require $2.1 billion from development banks, multilateral organizations and private institutions.

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